REMARKS

The Office Action dated January 25, 2005 has been carefully considered. Claim 15 has been amended. Claims 16 and 18 have been canceled. Claims 15, 17 and 19 are in this application.

Claim 15 has been amended to include the limitations of claims 16 and 18. No new matter has been entered.

The previously presented claims were rejected under 35 U.S.C. § 103 as obvious in view of previously cited U.S. Patent No. 3,988,423 to Ohrui et al. in combination with U.S. Patent No. 4,418,045 to Sato et al. and further in combination with U.S. Patent No. 4,038,032 to Brewer et al. and U.S. Patent No. 4,101,632 to Lamberti et al. Applicants submit that the teachings of these references do not teach or suggest the invention defined by the present claims.

The Office Action indicated that it would have been obvious in view of Brewer et al. or Lamberti et al. to modify the apparatus of the applied references (Ohrui '423 in view of Sato '045) with temperature measuring means in order to provide proper amounts of oxygen-containing gas to the reactor or discharged thru the stack.

Brewer et al. disclose a control system to conserve fuel consumption responsive to changes of pollutants in the waste gas stream. A temperature sensor at the combustion gas outlet from the incineration unit is used in an optimizing means to compare received signals with a predetermined level and provide an incremental step-up or step-down adjustment of a flow control for fuel supply to a burner unit.

In contrast to the invention defined by the present claims, Brewer et al. do not teach or suggest that oxygen is introduced at two inlets of an inlet of a pre-heater device and a region of the apparatus between the waste gas outlet of the second pre-heater device and the inlet of the reactor and the molecular oxygen-containing gas supplying device receives a signal from an oxygen concentration detector disposed in a pipe on a treated gas outlet side of the first pre-heater. Further, Brewer et al. do not teach or suggest that an oxygen concentration detector is dispersed in a pipe or a treated gas outlet side to control concentration of oxygen supplied by the molecular oxygen-containing gas supplying device. Rather, Brewer et al. is directed to controlling fuel flow to a combustion zone. As described on page 10, line 10 through page 11,

line 28 of the present specification, the present invention provides stable operation of the reactor by adjusting the concentration of oxygen in the molecular oxygen-containing gas supplying device based on a signal received from an oxygen concentration detector. There is no teaching or suggestion in Brewer et al. of adjusting oxygen concentration in the reactor. Instead, Brewer et al. is directed to unrelated control of fuel flow to the heat supply burner. Applicants submit it is only in hindsight that the Examiner can suggest combining Brewer et al. directed to temperature sensing for control of fuel flow with the applied references for controlling the amount of oxygen supplied to the waste gas system.

Lamberti et al. disclose a waste gas incineration control system in which a temperature controller 8 responsive to heat input in the chamber is used to increase or decrease the heat input in the chambers (col. 3, lines 60-65), and a high temperature selector (18) is used to cool the combustion chamber. (Col. 4, lines 1-10). Accordingly, the temperature controller is used for temperature management alone. Further, Lamberti et al. do not teach or suggest that oxygen is introduced at two inlets of an inlet of a pre-heater device and a region of the apparatus between the waste gas outlet of the second pre-heater device and the inlet of the reactor and the molecular oxygen-containing gas supplying device receives a signal from an oxygen concentration detector disposed in a pipe on a treated gas outlet side of the first pre-heater. Further, Lamberti et al. do not teach or suggest that an oxygen concentration detector is dispersed in a pipe or a treated gas outlet side to control concentration of oxygen supplied by the molecular oxygen-containing gas supplying device. Instead, Lamberti et al. teach adjusting the value of the free oxygen being fed to the combustion chamber using an oxygen controller. Accordingly, in Lamberti et al., the flow of air is adjusted based on the measurement result of CO concentration in the exit of exhaust gases. In contrast, in the present invention, the total flow of an oxygen-containing gas is adjusted based on the measurement result of temperature in the exit of exhaust gases. Thus, the by-pass flow of the oxygen-containing gas is adjusted with a control valve on the measurement result of temperature in the exit of exhaust gases. In the present invention, the oxygen-containing gas is introduced through the specified places, namely, two points, as defined by the amended claims. The adjustment of oxygen in the present invention is to balance the

supplying amount of oxygen through the defined two places, which is different from teachings of Lamberti et al.

Furthermore, neither Ohrui et al. or Sato et al. teach do not teach or suggest that oxygen is introduced at two inlets of an inlet of a pre-heater device and a region of the apparatus between the waste gas outlet of the second pre-heater device and the inlet of the reactor and the molecular oxygen-containing gas supplying device receives a signal from an oxygen concentration detector disposed in a pipe on a treated gas outlet side of the first pre-heater. Further, Ohrui et al. or Sato et al. do not teach or suggest that an oxygen concentration detector is dispersed in a pipe or a treated gas outlet side to control concentration of oxygen supplied by the molecular oxygen-containing gas supplying device.

Accordingly, the invention defined by the present claims is not obvious in view of Ohrui et al. in combination with Sato et al., Brewer et al. or Lamberti et al. because none of the references teach an apparatus for treating waste gas in which a molecular oxygen-containing gas supplying device supplies molecular oxygen to two parts in the apparatus an oxygen concentration detector is dispersed in a pipe or a treated gas outlet side to control concentration of oxygen supplied by the molecular oxygen-containing gas supplying device.

In view of the foregoing, Applicants submit that all pending claims are in condition for allowance and request that all claims be allowed. The Examiner is invited to contact the undersigned should he believe that this would expedite prosecution of this application. It is believed that no fee is required. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,

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